



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/742,888	12/20/2000	Andrew Beals	CISCP668	8236
26541	7590	06/23/2006	EXAMINER	
Cindy S. Kaplan P.O. BOX 2448 SARATOGA, CA 95070			SEFCHECK, GREGORY B	
			ART UNIT	PAPER NUMBER
			2616	

DATE MAILED: 06/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/742,888

Applicant(s)

BEALS, ANDREW

Examiner

Gregory B. Sefcheck

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-8,10-15,17,18,21,22 and 24-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12,13, and 29 is/are allowed.
- 6) ☒ Claim(s) 1,3,4,7,8,10,11,14,15,17,18,21,22 and 25-28 is/are rejected.
- 7) ☒ Claim(s) 5,6 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

- Applicant's Request for Continued Examination filed 4/11/2006 is acknowledged.
- Claims 1, 3, 5-8, 10, 12, 14, 15, 17, 21, 22, and 25 have been amended.
- The previous rejections of claims 3, 6, 10, and 17 under 35 USC 112, 2nd paragraph are withdrawn in light of the amendment.
- Claims 2, 9, 16, 19, 20, and 23 had been previously cancelled.
- Claims 27-29 have been added.
- Claims 1, 3-8, 10-15, 17, 18, 21, 22, and 24-29 remain pending.

Claim Objections

1. Claims 5, 6, and 24 are objected to because of the following informalities:
 - Typographical error on line 8 of claim 5: "mode" should be changed to - - node - -
 - On lines 15 and 17 of claim 5: "newly contactable node" should be changed to - - newly contactable slave node - - to be consistent with the antecedent basis established on lines 7-8 of claim 5.
 - Claims 6 and 24 are objected to because they depend from claim 5.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, 4, 7, 8, 10, 11, 14, 15, 17, 18, 21, 22, and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bandeira et al. (US 20020072329A1), hereafter Bandeira, in view of Larsen (US006785510B2).

- In regards to Claims 1, 3, 4, 7, 8, 10, 11, 14, 15, 17, 18, 21, 22, 25-28,

Bandeira discloses an apparatus and associated software-implemented method for operating a scalable wireless network topology by providing shared wireless access to distributed nodes (Title; Abstract; Col. 13, lines 55-58; claim 1,7,14,15,21,22 – apparatus and method executed through a stored computer program for coordinating shared medium access in wireless network; claim 8 – apparatus for operating master node of wireless network; claim 27 – schedule for transmission over a single channel; claim 8,14 – wireless interface for communicating information via a wireless medium).

Referring to Figs. 2, Bandeira shows a multi-level network hierarchy comprising a master node 1, a plurality of slave nodes 2-12 and at least one submaster node 2,3,4,6 (claim 1,7,8,14,15,21,22 – network comprising master node, slave nodes and at least one submaster node).

Referring to Figs. 5, 7, and 8, Bandeira further shows the master node coordinates access to the medium through scheduled time slots of varying length, with a new node incorporated into the network if within radio frequency range of any existing node in the network even if not in range of the master node (claim 1,3,7,10,14,15,17,21 – admission of new slave node able to communicate directly with submaster node but out of range of master node).

Upon attachment, the attached-to existing node's time slot may be expanded to incorporate the transmission of the new node (Abstract; Pg. 5, paragraphs 59-61; claim 1,8,14,15,21,22 – means/code for generating a schedule for node transmission precluding collisions between simultaneous transmission by any pair of nodes; claim 7,14,21 – schedule comprises time slots allocated to nodes that can be directly contacted by the master node; claim 1,7,8,14,15,21,22 – means/code for distributing the schedule to nodes controlled by master node; claim 1,7,8,14,15,21,22 – schedule for a 2+ level hierarchy; claim 3,7,10,14,17,21,25 - time slot to accommodate submaster and new node that is out of range of master node; claim 26 – schedule comprises determining when to expand time slots to accommodate new node; claim 28 – schedule for new slave node is included within schedule for submaster node). As shown in Fig. 4, the time slot access shown by Bandeira precludes collisions, including simultaneous transmission by any pair of nodes that do not hear each other's transmissions (Fig. 4; claim 1,8,15,22 – means/code for generating a schedule for node transmission precluding collisions between simultaneous transmission by any pair of nodes that do not hear each other).

Bandeira does not explicitly disclose recording, at the master node, a contact path from the master node to the new slave node including the submaster node.

Larsen discloses routing in a multi-station network in which wireless access is coordinated for a plurality of nodes (Title; Fig. 2). Referring to Figs. 2, 4a-b and 6a-b, Larsen discloses how extended data service coverage may be provided. Larson shows that node MSa (ID003), though out of range of NODEB (ID000), may be added to the network by communicating with NODEB through MSb,c. Larson shows that a contact path from MSa to NODEB is recorded through acknowledgements made by each forwarding node. Link assignment is then sent back to the requesting mobile through the intermediate nodes (Col. 10, lines 23-61; claim 1,8,15,22 – recording contact path from master node to new node that includes submaster node).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus and software-implemented method for controlling access to a shared medium of a wireless network of Bandeira by recording, at the master node, a contact path from the master node to the new slave node including the submaster node, shown by Larsen. This would improve the master node's ability to know when a respective time slot assigned to a directly contactable slave node should be expanded to accommodate a newly contactable slave node that is not able to contact the master node directly.

Allowable Subject Matter

4. Claims 12, 13, and 29 are allowed.
5. Claims 5, 6, and 24 would be allowable if rewritten or amended to overcome the objections to independent claim 5 set forth in this Office action.

- In regards to Claims 5 and 12,

The prior art of record does not teach or fairly suggest a method for coordinating access to a shared medium or apparatus for operating a selected node of a network in which a new node, slave nodes and master node define three levels of a transmission control hierarchy such that only a single node is allowed to transmit at a time.

Response to Arguments

6. Applicant's arguments filed 4/11/2006 have been fully considered but they are not persuasive.

- In the Remarks on pg. 15-16 of the Amendment, Applicant contends that Bandeira discloses a transmission schedule configured to avoid collisions within a branch and not between simultaneous transmissions by any pair of nodes including those that do not hear each other's transmissions. Applicant contends that the root (master) node has no knowledge and makes no modification for children nodes of a parent node because a slave node can operate as a master node to control its children separate from the root node,

therefore, not all slave nodes are controlled by the original master node.

Applicant contends that a slave node may not respond to a parent node because it is busy performing its own polling cycle.

- The Examiner respectfully disagrees. Fig. 4 of Bandeira shows that the transmission schedule is arranged in such a way that the polling cycle of slave nodes (submasters) having responsibility for transmissions of further slave nodes are performed with regard to the submaster's position in the root node's polling cycle (i.e. the submaster's polling cycle begins immediately after it is polled by the root node, such that it will have completed its polling cycle prior to being subsequently polled by the root node; see paragraphs 59-61 on pg. 5 of Bandeira). In this way, transmissions from all the slave nodes are controlled by the root node. Collisions between nodes that do not hear each other's transmissions would not be applicable until those transmissions are received by the respective node's submaster, at which point the generated schedule of the master node dictated to each submaster is generated in such a way as to preclude collisions. Therefore, the schedule precludes collisions between simultaneous transmission by any pair of nodes including those that do not hear each other's transmissions, since the polling cycles of submaster nodes may be performed independently while adhering to the constraints of the root node's polling cycle.

- In the Remarks on pg. 16-18 of the Amendment, Applicant contends that Bandeira does not disclose a time slot allocated for both a submaster node and a slave node which is able to contact the submaster node but not within range of the master node. Applicant further contends that Larsen does not remedy this deficiency of Bandeira.
- The Examiner respectfully disagrees. As shown in the rejection, Larsen discloses a transmission allocated for both a submaster node and a slave node that is able to contact the submaster node but is not within range of the master node. Larsen does not explicitly show the use of time slot allocations for supporting the transmission. For this reason, the time slot allocation of Bandeira is used to show this feature, combined with the disclosure of Larsen, to disclose a time slot allocated for both a submaster node and a slave node which is able to contact the submaster node but not within range of the master node.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Acampora et al. (US005528583A)
- Meier (US005504746A)
- Acampora et al. (US005487065A)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory B. Sefcheck whose telephone number is 571-272-3098. The examiner can normally be reached on Monday-Friday, 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GBS *GBS*
6-16-2006

Seema S. Rao
SEEMA S. RAO 6/20/06
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600